Improving Fuel Economy

NGP2005 Objectives

●Early attainment of Japan's 2010 fuel economy standards for gasoline vehicles and 2005 standards for diesel vehicles

[Objective] Attainment of the new standards by 2005 target date

Major Results by FY2005

●Almost all targets achieved
(Gasoline passenger vehicles in 7 weight classes, gasoline trucks in 13 classes, diesel vehicles in all classes)

Nissan Serena (Japan) achieved the level exceeding 20% of Japanese 2010 fuel economy standard

Of the total volume of CO_2 emissions associated with the life cycle of an automobile, the largest portion occurs when the vehicle is on the road. Nissan is working at all levels to improve fuel economy with the aim of reducing overall CO_2 emission volumes.

Fuel Economy Targets Achieved

In Fiscal 2005, our lineup of new gasoline powered passenger models achieved Japan's 2010 fuel economy standards based on an overall weighted average. Broken down by weight category, however, some categories did not meet our objective of meeting the 2010 standards by 2005. We remain dedicated to our goal of all vehicles meeting the standards ahead of their adoption, and are accelerating development of fuel economy technology and preparing wider applications for our new VQ, HR and MR engines, Xtronic CVT, and other technologies to further improve the overall fuel economy performance of our vehicles.

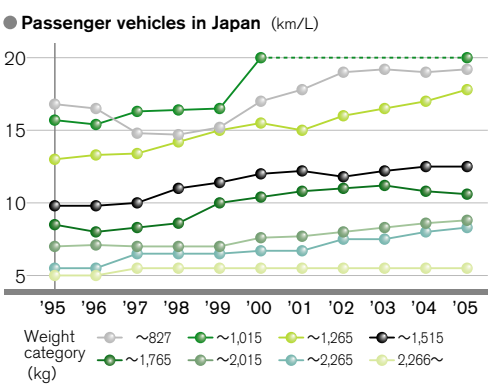
All of our in-house developed gasoline trucks meet the fuel economy standards, but some of the vehicles produced for us on an original equipment manufacturer (OEM) basis do not. We are working with our OEM suppliers to improve the fuel economy performance of these vehicles.

Increased Engine Efficiency

Progress in enhancing engine efficiency was achieved by advances in several areas, including reducing energy loss caused by friction and improving thermal efficiency. In HR and MR engines announced in 2004, Nissan reduced friction resistance by about 30% through such measures as applying Nissan technology to polish bearing components to a mirror-like finish and applying a machining technique that is usually used for racing car engines. In addition, we achieved a superior fuel combustion speed, which enabled top level combustion efficiency for vehicles in this class and improved "real-world fuel economy*" and acceleration performance.

* Real-world fuel economy: a vehicle's average fuel economy as measured by Nissan, based on the mix of fuel economy tests conducted under actual driving conditions—city streets, highways, and heavy traffic streets, for example—encountered by real drivers.

Fuel Economy Trends



Expanded CVT Promotion

We have been focusing on developing and introducing a belt-type CVT that continuously varies the transmission ratio as a technology to improve both engine performance and fuel economy. Today Nissan is the world leader in CVT technology, which it offers in a broad range of passenger vehicles.

Nissan sold over 450,000 units of CVT-fitted vehicles in Fiscal 2005 and aims to raise CVT-fitted vehicle sales above one million units in Fiscal 2007. The reduction in CO_2 emission volume achieved by one million CVT-fitted vehicles is estimated to be equivalent to the reduction amount attainable by 200,000 hybrid vehicles.

Lighter Vehicle Weight

Nissan's Committee for Lighter Vehicle Weight Promotion sets weight reduction targets for each model and works in tandem with suppliers to meet the targets. The Skyline released in 2001 incorporates an array of aluminum materials, making the model one of the world leaders in lightweight suspension. In addition, the FUGA released in 2004 was lightened by about 38kg by partly using aluminum materials.

Development and Expanded Use of e-4WD

Nissan's e-4WD enhances traction and driving performance on low-traction surfaces, such as roads covered in snow or ice, while also improving fuel economy. The e-4WD is the world's lightest and most compact electric four-wheel-drive system. Nissan estimates the e-4WD system offers over 5% better fuel economy than conventional 4WD systems. Nissan has equipped the March and the Cube with this system since 2002.

Fuel Economy of Major New Models

New high-efficiency engines, improved vehicle construction, and other advancements have enhanced the fuel economy of the new 2005 Serena and Wingroad models. Compared to same-class existing models, the Serena and Wingroad are respectively 7% and 12.5% more fuel efficient under the 10-15 mode* and 30% and 25% more efficient based on Nissan's in-house standards for real-world fuel economy.

*10-15 mode: official test mode for passenger vehicles in Japan

Reduction of Exhaust Emissions

Nissan has been a forerunner in the development of catalyst and combustion technology as well as in bringing the results of our research to market in the form of vehicles with ultra-low emission performance. We are actively pursuing our goal of wider diffusion of these eco-friendly technologies.

NGP2005 Objectives

●Gasoline vehicles

- Steady expansion of Nissan's ultra-low emission vehicle (U-LEV) lineup, starting with the 2000 launch of the Bluebird Sylphy

[Objective] Achieve U-LEV certification for more than 80% of all Nissan passenger vehicles sold in Japan by end-March 2003

●Diesel vehicles

- Early Release of vehicles complying with the latest exhaust emission regulations

Major Results by FY2005

●Gasoline vehicles

- Achieved U-LEV certification for more than 80% of all Nissan passenger vehicles sold in February 2003
- Set new target of earning SU-LEV certification for 80% of all Nissan passenger vehicles, achieved this target in May 2006
- Achieved U-LEV and SU-LEV for more than 95% of all Nissan passenger vehicles sold by end-March 2006

●Diesel vehicles

- Completed the transition of all diesel vehicles to full compliance with Japan's new short-term emission regulations. Launched the "ultra-low PM emissions diesel vehicles" Atlas 20 in June 2004

U-LEV Development and Market Introduction

In January 2000, Nissan launched the Sentra CA featuring a number of innovative technologies including high-speed jet high swirl combustion, an ultra-low heat mass catalyst, and a high-precision air/fuel ratio control system. Verified as surpassing the rigid emission standards, the California Air Resources Board (CARB) certified the Sentra CA as the world's first Partial Zero Emission Vehicle (PZEV) gasoline vehicle. Nissan followed with the release of the 2.5L Altima to the U.S. market as a certified PZEV in 2003.

Nissan's continuing advances with the Sentra CA technology led to the release in Japan of the Bluebird Sylphy in August 2000, which became the first gasoline vehicle to receive certification by the Japanese Ministry of Land, Infrastructure and Transport as an Ultra-Low Emissions Vehicle (U-LEV).* The Bluebird Sylphy achieved emission levels 50% lower than the U-LEV standard and when the Super Ultra-Low Emission vehicle (SU-LEV)** certification system started in December 2003, was certified as Japan's first SU-LEV. The vehicle also complies with the 2010 fuel economy standards.

* U-LEV: A vehicle that emits 75% fewer exhaust emissions of nitrogen oxide (NOx) and hydrocarbon (HC) than the level prescribed in the year 2000 exhaust emissions standards

** SU-LEV: A vehicle that emits 75% fewer exhaust emissions of nitrogen oxide (NOx) and nonmethane hydrocarbon (NMHC) than the level prescribed in the year 2005 exhaust emissions standards

SU-LEV Diffusion Targets

To make a true contribution to reducing the environmental impact of automobiles, it is important that vehicles with low-emissions technology become more widely available. Based on this view, we set a target* of making more than 80% of the gasoline vehicles we sell in Japan U-LEVs, and achieved that goal in February 2003. We then set a higher target of making 80% of our gasoline vehicles in Japan SU-LEVs, and we achieved that target in May 2006. As of March 2006, over 95% of our gasoline vehicles sold in Japan were certified U-LEV and SU-LEV models.

* We estimate that increasing SU-LEV unit sales to 80% of our total unit sales of gasoline vehicles in Japan would reduce NOx and HC by roughly the same amount as converting 40% of our unit sales to fuel-cell or electric vehicles.

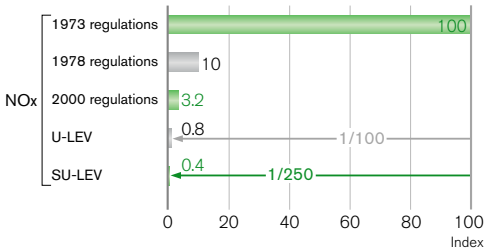
Cleansing Diesel Emissions

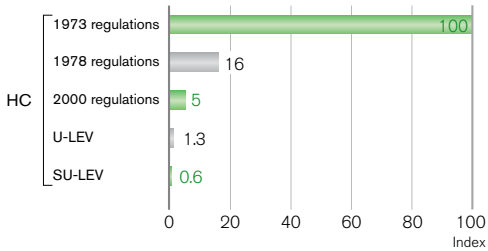
We equip our diesel engines with the Nissan "common rail fuel injection system" to maximize fuel combustion rates and with the "self-regeneration type diesel particulate filter (DPF) system" with a catalyzed filter that captures, oxidizes and removes particulate matter. These and other technologies are key advances toward bringing our diesel vehicles into full compliance with Japan's new long-term emission regulations.

To date, we have launched two certified "ultra-low PM emissions diesel vehicles"; the Atlas 20 cab-over truck Atlas 20 in June 2004 and the Atlas 20 Hybrid model in May 2006.

Nissan Note (Japan) certified as a SU-LEV

Exhaust Emissions of SU-LEV (%, Japan)





Web Environmental Activities
Development of Fuel Cell Vehicle (FCV)

Development of Clean Energy Vehicles (CEVs)

NGP2005 Objectives

●**Fuel cell vehicles (FCVs)**
- Projecting the year 2005 as our technical development goal for practical use
- Participation in domestic demonstration program for FCVs under the auspices of the Japanese government in 2002

●**Other CEVs**
- Research, development, and market introduction of electric vehicles (EVs), compressed natural-gas vehicles (CNGVs), hybrid electric vehicles (HEVs)

Major Results by FY2005

●**Fuel cell vehicles**
- Commenced participation in the Japan Hydrogen & Fuel Cell Demonstration Project (JHFC) in July 2002
- Began limited lease of the X-TRAIL FCV 2003 model in December 2003, first vehicle delivered in March 2004
- Announced Nissan's first in-house developed fuel cell stack and 70MPa high-pressure hydrogen storage system
- Commenced limited leasing program of the 2005 model began in December 2005
- Developed a vehicle that improved the previous model's cruising range by 1.4 times to over 500 km
- The announcement of the X-TRAIL FCV 2005 model and the completions of the in-house developed fuel cell stack and 70MPa high-pressure hydrogen storage system

●**Other CEVs**
- Launched several CEVs, including the Hypermini EV, AD Van CNG, and Tino Hybrid models
- Announced the Altima Hybrid model (scheduled for early 2007 U.S. market launch)

X-TRAIL FCV 2005 model

Nissan continues to make advances developing technology and products associated with fuel cell vehicles, electric vehicles, compressed natural-gas vehicles, hybrid vehicles and other clean energy vehicles with the aim of controlling CO_2 emission volumes and cleansing exhaust gas.

Fuel Cell Vehicles (FCVs)

Nissan commenced FCV development in 1996 and expanded to full-scale development in 2001. We are making steady progress toward the commercialization of FCVs through public road testing in Japan and North America and limited leasing of FCVs in Japan. (See the Timeline table below.)

Electric Vehicles (EVs)

In 2000, Nissan launched the Hypermini, an ultra-compact electric vehicle as a revolutionary new concept for city driving. Nissan has been working with researchers at the University of California, Davis since November 2001 to conduct marketability studies of ultra compact electric vehicles while activating a working car sharing program.

Compressed Natural-Gas Vehicles (CNGVs)

In January 2000, the Nissan AD Van CNG became the world's first certified ultra-low emission vehicle (U-LEV) and went on to capture top market share in the compact van CNG vehicle market. Nissan followed with the releases of the Caravan CNG, Civilian CNG, and Atlas CNG and plans to continue introducing a wide range of commercial vans, microbuses, trucks and other vehicle types to fill out its lineup of natural-gas models.

Hybrid Vehicles (HEVs)

Nissan has developed in-house hybrid technology, which resulted in the launch of Tino Hybrid in April 2000. With the aim of further developing hybrid vehicle technology to meet emerging customer needs, we formed a technical partnership in September 2002 with Toyota Motor Corporation. In June 2004, we produced a prototype of the Nissan Altima Hybrid and set a launch date in early 2007 for the U.S. market.

Nissan FCV Technology Development Timeline

1996	Start of FCV technology development
1999	Start of driving tests for the R'nessa FCV, a methanol reformer fuel cell vehicle.
2001	Nissan enters into a five-year, ¥85 billion alliance with Renault to develop FCV technology
2001 April	Road testing of the Xterra FCV in California
2002 July	Participation in the Japan Hydrogen & Fuel Cell Demonstration Project (JHFC)
2002 December	Debut of the X-TRAIL FCV 2003 model and start of road tests in Japan (top speed 125km/h, cruising range over 200km)
2003 December	Limited leasing of the 2003 model (top speed 145km/h, cruising range over 350km)
2004 March	X-TRAIL FCV delivered to Cosmo Oil Co., Ltd.
2004 April	X-TRAIL FCV delivered to Kanagawa Prefecture and the City of Yokohama
2005 February	Developed Nissan's first in-house fuel cell stack and a 70MPa high-pressure hydrogen storage cylinder
2005 December	Limited leasing sales of the X-TRAIL FCV 2005 model (cruising range over 370km and top speed 150km/h) and developed the model using the 70MPa high-pressure hydrogen storage cylinder (cruising range over 500km)
2006 February	Road testing in Canada of the X-TRAIL FCV 2005 model (cruising range over 500km) equipped with the 70MPa high-pressure hydrogen storage system

Promotion of Design for Recycling and Management/ Reduction of Environmentally Impacting Substances

NGP2005 Objectives

- **Advancing the recycling of new models**
  - Attainment of a recoverability rate of 95% or higher by weight for new models by 2005 (based on Nissan in-house calculation standards)
- **Reduction of environmentally impacting substances**
  - Banning the use of mercury (with limited exceptions) and cadmium
  - Reducing the use of lead (to be largely phased out by the end of 2002) and hexavalent chromium (to be reduced to one-half of 1996 levels by 2005)

Major Results by FY2005

- **Promotion of recycling for new models**
  - Models released since FY2001 for which 95% recoverability was attained
- **Reduction of environment-impacting substances**
  - Use of mercury and cadmium materials was banned, with certain exceptions
  - Achieved the industry target to "reduce lead content to 10% or less than 1996 levels" for 23 models, including the Serena, Wingroad, and Bluebird Sylphy
  - Reduced hexavalent chromium content in the Bluebird Sylphy to less than 50% the 1996 level

***Exceptions to JAMA's* voluntary targets**

- Lead: Lead batteries (because the collection route is established)
- Mercury: Liquid crystal displays of navigation systems and other devices, combination meters, discharge headlamps, and interior fluorescent lights (minimal amounts used in parts considered essential for traffic safety)

*JAMA: Japan Automobile Manufacturers Association, Inc.

Brought cabin VOC concentrations below guideline values set by the Ministry of Health, Labor and Welfare in the Bluebird Sylphy (Japan)

Nissan implements recycle-based design concepts at the new vehicle development stage to increase the effective use of natural resources. Vehicles are developed with targets for recoverability rate (ease of recycling) and dismantling efficiency (ease of dismantling at the end of life stage), and to incorporate material identification markings for plastic and rubber parts. All operations are conducted in compliance with ISO14001 standards.

Promotion of Design for Recycling

To improve reuse and recycling at the end of a vehicle's service life, Nissan has prepared "Recycling Design Guidelines" outlining the areas to improve our existing products, present new product structure ideas, and introduce other recycling concepts. We follow the principle of the "3Rs (Reduce, Reuse, and Recycle)" from the initial design phases in an effort to use materials that improve product structure and facilitate the ease of recycling. These guidelines are the result of many years of dismantling research of vehicles at the end of their service life.

Nissan teamed with Renault to develop the OPERA recycling simulation system that uses basic data on parts materials and information collected during dismantling processes to simulate the vehicle recoverability rate and recycling costs at the early stages of vehicle design.

These efforts enabled us to achieve recoverability rates of over 95% for the new March and Cube models released in 2002, the Cube Cubic in 2003, and the Lafesta in 2004. Since the Note debuted in 2005, all new Nissan models have achieved this high standard, and the company now markets eight vehicles with recoverability rates of 95% or higher.

Reduction of Substances with Environmental Impact

We carefully monitor and control the chemicals contained in our products based on Nissan chemical substance guidelines with the aim of reducing the use of materials that negatively impact the environment. We also make our business partners aware of Nissan policies, targets, and handling methods for substances with potential environmental impact and request reports on conditions and progress made toward reducing usage of the substances.

The adoption of lead-free materials for fuel tanks, electro-deposition coating, wheel balance weights, and other areas enabled Nissan to meet the Japanese automotive industry's 2006 target for lead use in Fiscal 2003, three years ahead of schedule. Our goal is to reduce lead use to 10% or less of the average amount used in Fiscal 1996. All new Nissan vehicles released since Fiscal 2004, a total of 23 models, meet this standard.

We have also stopped nearly all use of mercury and cadmium. The use of hexavalent chromium is also steadily being reduced in our vehicles, and we have already achieved the industry target of "less than half the average amount used in 1996" for the Bluebird Sylphy.

Product Development

Reduction of Vehicle Noise

NGP2005 Objectives

- Compliance by all models with voluntary targets for vehicle noise that are stricter than regulatory noise limits

Major Results by FY2005

- Achieved voluntary targets for all models

The noise produced by running vehicles is perhaps one of the most immediately noticeable environmental impacts produced by automobiles. Nissan has set voluntary noise targets—met by all of our models—that are stricter than regulatory noise limits.

Reducing Noise at the Source

Vehicles produce noise from various sources, including the engines, tires, exhaust, air intakes, cooling fans, and wind noise. Nissan takes an overall approach to reducing vehicle noise by conducting study and development on vehicle sections as well as on individual components.

Voluntary Targets Stricter than Regulatory Noise Limits

Nissan has adopted voluntary targets for vehicle noise, which are 1dBA stricter than the regulatory noise limits for all vehicles. All of our passenger vehicle models achieved compliance with our voluntary targets in Fiscal 2000, and all of our commercial vehicles achieved compliance in Fiscal 2002.

Product Development

Control of Air-conditioner Refrigerant Emissions

NGP2005 Objectives

- Attainment of Nissan's voluntary targets for reduced use of the HFC134a refrigerant

Major Results by FY2005

- Achieved voluntary targets for 32 models

Some refrigerants used in vehicle air conditioning units are destructive to the ozone layer. Nissan has been making efforts to develop units that use less refrigerant as well as to develop new refrigerants with less environmental impact.

Reducing Refrigerant Use

When the chlorofluorocarbon 12 (CFC12), commonly used in vehicle air conditioning units, was found to be highly destructive to the earth's natural ozone layer, we promptly switched to using the alternative refrigerant hydrofluorocarbon 134a (HFC134a) and by the end of 1994 had eliminated all use of CFC12 in our vehicles.

HFC134a is less harmful than CFC12 but has also been identified as a greenhouse gas. As we continue seeking a better alternative, we have been equipping our new vehicles with air conditioning units that use smaller volumes of refrigerant and that are designed to prevent leakage when the unit is operated.

Based on objectives outlined by the Japan Automobile Manufacturers Association (JAMA), Nissan has set a voluntary target of steadily introducing air conditioning units that use 10% less refrigerant volume than 1995 levels. As of the end of 2005, air conditioning units meeting these voluntary targets are installed in 32 of our vehicle models.

Developing Eco-friendly Refrigerant

We are actively participating in research with car air conditioning unit makers to develop systems that use a new refrigerant based on CO_2 and hydrocarbon (HC), which has less impact on global environment.

In Fiscal 2003, the X-TRAIL FCV 2003 model was introduced with an air conditioner using a CO_2-based refrigerant we developed with Calsonic Kansei Corp. The unit features high refrigerant density at low temperatures while also providing very effective heating. In addition, the CO_2 used in the refrigerant is recycled from our plant CO_2 emissions, thus further reducing the overall emission of CO_2. We are continuing with research and development of this promising technology with the aim of introducing similar units to our gasoline vehicles.